

## **ATTACHMENT 2**

### **SAGE-GROUSE SEASONAL HABITAT COMPONENT DESCRIPTIONS**

To effectively manage for sage-grouse and their habitat it is necessary to have a basic understanding of general sage-grouse biology and habitat needs.

The following seasonal use periods and habitat components are important to sage-grouse and contribute to their productivity and conservation. Breeding habitats have been identified as limiting factors in sage-grouse populations across their range. Winter habitats have been identified as a limiting factor in portions of their range when sage-grouse are unable to have access to sagebrush under a variety of snow conditions. The following habitat descriptions are a composite characterization of sage-grouse seasonal use areas found across Wyoming as presented in the Wyoming Sage-grouse Conservation Plan (WGFD 2003). These descriptions are most useful in providing an overall, contextual view of typical sage-grouse seasonal habitats in Wyoming, a State of very diverse ecosystems. Important sage-grouse seasonal habitats and use areas can vary from one part of the State to another. The regional sage-grouse plans prepared by the local sage-grouse working groups (LWG) provide a more specific description of the seasonal habitats and use areas for each region of the State.

The following are descriptions of breeding and winter habitat components which are based on definitions entitled “Wyoming Sage-grouse Definitions” developed and adopted by the WGFD, and others (Attachment 1).

#### **BREEDING HABITATS:**

Breeding habitats are composed of leks, nesting and early brood-rearing habitats.

**Leks** - A lek is typically an open area surrounded by potential nesting habitat. The common feature of leks is that they have less shrub and herbaceous cover than surrounding habitats. The sagebrush cover that surrounds a lek provides important hiding cover from predators for both the male sage-grouse and particularly hens while attending a lek. Sagebrush cover immediately adjacent to a lek may or may not meet the following definition of productive, high quality nesting habitat.

**Nesting/Early Brood-Rearing Habitat** - Nesting habitat for sage-grouse in Wyoming is generally described as sagebrush stands having canopy cover 15 to 30 percent and shrub heights of 11 to 32 inches (40-80 cm). Grasses and forbs with height (6 inches (15 cm) or greater) and shrub canopy cover (greater than 15 percent) provides important cover and food for sage-grouse using these habitats. Early brood-rearing habitat generally has 10 to 25 percent sagebrush canopy cover and has slightly higher canopy cover of grasses and forbs than nesting habitat. Early brood-rearing habitat is generally used by sage-grouse hens with chicks when the chicks range in age from newly hatched up to 21 days of age.

Research conducted on sage-grouse nesting activities range-wide has established that incubating hens normally leave the nest twice a day for 20 to 45 minutes during the early morning and late afternoon to feed (Holloran 2005). Activities or actions that cause hens to leave the nest more frequently or for longer periods increase the likelihood of nest failure. Studies since 1977 indicate that many populations of sage-grouse contained birds nesting much further than 2 miles from the lek of breeding. Studies conducted in Wyoming from 1994 to 2003 indicate 45 percent of sage-grouse hens

nest within 1.86 miles (3 km) of the lek, 64 percent nest within 3.1 miles (5 km), and 74 percent of nests are located within 4 miles (6.5 km) of the lek (Holloran and Anderson 2005, Holloran et al. 2007). Nest locations are independent of lek location, and are based on availability of suitable nesting habitat. Not all sagebrush habitats within these 2 to 4 mile radius distances may be suitable as nesting habitat or other seasonal habitats for sage-grouse.

#### **WINTER HABITAT:**

During winter, sage-grouse feed almost exclusively on sagebrush leaves and buds. Suitable winter habitat requires sagebrush above snow. Sage-grouse tend to select wintering sites where sagebrush is 10-14 inches (25 -36 cm) above the snow. Sagebrush canopy cover utilized by sage-grouse above the snow may range from 10 to 30 percent. Foraging areas tend to be on flat to generally southwest facing slopes or in areas where sagebrush height may be less than 10 inches (25 cm) but the snow is routinely blown clear by wind. When these conditions are met, sage-grouse typically gain weight over winter. In most cases, winter conditions are not considered limiting to sage-grouse in Wyoming. Under severe winter weather conditions sage-grouse will often be restricted to tall stands of sagebrush usually located on deeper soils in or near drainages. Under these severe winter conditions, winter habitat may be limiting. On a landscape scale, sage-grouse winter habitats should allow sage-grouse access to sagebrush under all snow conditions.

Large numbers of sage-grouse have been documented to consistently use some specific areas which are characterized by the habitat features outlined above. These areas are "winter concentration areas." Not all winter habitats used by sage-grouse, or "severe winter relief" habitats (a survival range), serve as winter concentration areas. Delineation of these concentration areas is based on determination of the presence of winter habitat characteristics confirmed by repeated observations and/or sign of large numbers of sage-grouse. The definition of "large" is dependent on whether the overall population is large or small. In core population areas frequent observations of groups of 50+ sage-grouse meet the definition, while in marginal populations group size may be 25.